

Serial No.: 10/705,906
Art Unit: 2682

Attorney's Docket No.: H0004444-5806
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Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 2A. This sheet, which includes Figs. 2A and 2B, replaces the original sheet including Figs. 2A and 2B.

Attachment: Replacement Sheet

REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks.

Claims 1-12 were pending in this application. Claims 1, 7, and 11 have been amended. Accordingly, claims 1-12 will remain pending herein upon entry of this Amendment. Support for the amendment to each of the claims can be found, for example, at paragraph [0018] of the present application. For the reasons stated below, Applicant respectfully submits that all claims pending in this application are in condition for allowance.

In the Office Action, the disclosure was objected to because of informalities. The drawings were objected to as failing to comply with 37 CFR §1.84(p)(5). Claims 7 and 11 were rejected under 35 U.S. C. §102(b) as being anticipated by Artus ("Artus"). Claims 1, 4, 6, 10 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Artus in view of Bootle ("Bootle"). Claims 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over Artus in view of Scheak. Claims 3 and 8 were rejected under 35 U.S.C §103(a) as being unpatentable over Artus in view of Grenet et al. Claims 5 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Artus in view of Patel and Watari. To the extent these rejections might still be applied to claims presently pending in this application, they are respectfully traversed.

Preliminarily, Applicant has amended Figure 2A to delete reference number "217". Thus the objection to Figure 2A is believed to be overcome.

Independent claim 1, as amended, recites that a thermal filler is disposed between the shell and at least one of the electronic components that generates heat when in use, the thermal filler substantially filling without interruption a space defined by the at least one of the electronic components and a portion of the shell directly opposite the at least one of the electronic components, and a lightweight material, different in composition from the thermal filler, fills a void between the shell and the printed wiring board and electronic components that is not filled by the thermal filler. Similar features are also recited in amended independent claim 7. The method of amended claim 11 recites injecting a thermal filler into the shell in a region between the shell and at least one electronic component that generates heat when in use; and injecting a lightweight filling material to substantially fill any remaining voids in the shell after the thermal filler is injected.

Applicant respectfully submits that none of the cited prior art teaches or suggests the above feature of amended claims 1, 7, and 11. In Artus, a component assembly comprises a heat sink material filling a housing having connector means extending externally and locating means mounted in the housing. The heat sink material comprises microcrystalline material such as diamond and a filler material such as a fluorocarbon or paraffin. Artus, however, fails to teach or suggest that the heat sink material is disposed between a shell and at least one of electronic components that generates heat when in use, the thermal filler substantially filling without interruption a space defined by the at least one of the electronic components and a portion of the shell directly opposite the at least one of the electronic components, and a lightweight material, different in composition from the thermal filler, fills a void between the shell and a printed

wiring board and the electronic components that is not filled by the thermal filler, as recited in amended claim 1 and similarly in amended claim 7. The components 8, 9, and 15 of Artus represents spacers, wedge members, and clamping plates, respectively, that are not the same as the lightweight material recited in amended claims 1, 7, and 11, as pointed out by the Examiner in paragraphs 4 and 6 of the Office Action. As described at col. 4, line 53-60, after the sub-assemblies 10 are mounted in the housing 1 by means of spacer 8 and wedge members 9, the housing 1 is completely filled with a heat sink material 19. Such manufacturing process of Artus makes heat sink material 19 fill a space between side walls 4 (i.e., shells) and spacer 8 or wedge member 9 and a space between spacer 8 or wedge member 9 and sub-assemblies 10. Clearly, then, the heat sink material 10 of Artus does not substantially fill without interruption a space defined by the at least one of the electronic components and a portion of the shell directly opposite the at least one of the electronic components, as recited in amended claims 1 and 7.

Furthermore, from the above description regarding Artus, heat sink material 19 is filled in housing 1 after spacer 8 and wedge member 9 are installed. Artus, accordingly, also fails to teach or suggest that steps of amended claim 11 that injects a thermal filler into the shell in a region between the shell and at least one electronic component that generates heat when in use; and injects a lightweight filling material to substantially fill any remaining voids in the shell after the thermal filler is injected, as recited in amended claim 11.

Accordingly, Applicant respectfully submits that amended claims 7 and 11 are not anticipated by Artus under 35 U.S.C. §102 (b).

Amended claim 1 was rejected under 35 U.S.C. §103(a) over Artus in view of Bootle. As described above, Artus fails to teach or suggest that a thermal filler substantially fill without interruption a space defined by the at least one of the electronic components and a portion of the shell directly opposite the at least one of the electronic components, and a lightweight material, different in composition from the thermal filler, fill a void between the shell and the printed wiring board and electronic components that is not filled by the thermal filler, as recited in amended claim 1. Bootle, on the other hand, is irrelevant to a circuit card assembly of the present invention. Specifically, Bootle describes an enclosure for providing electromagnetic shielding of electric circuitry contained therein but has nothing to do with a circuit card assembly that comprises a printed wiring board, a shell comprising planar sheets of composite material disposed on opposite sides of the printed wiring board, a thermal filler, and a lightweight material, as recited in amended claim 1. Since Bootle and Artus describe completely different applications, it would not have been obvious for one skilled in the art to combine Artus and Bootle to achieve the present invention.

Accordingly, Applicant respectfully submits that amended claim 1 should be patentable over Artus in view of Bootle.

Furthermore, due to their dependencies from patentable independent claims, Applicant respectfully submits that dependent claims 2-6, 8-10, and 12 should be also patentable over Artus in view of any of Bootle, Scheak, Grenet et al., and Patel.

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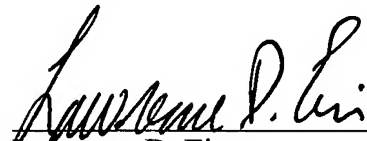
In view of the foregoing all of the claims in this case are believed to be in condition for allowance. Should the Examiner have any questions or determine that any further action is desirable to place this application in even better condition for issue, the Examiner is encouraged to telephone applicant's undersigned representative at the number listed below.

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Respectfully submitted,

Date: January 30, 2006

By:


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Attachments: Replace sheet of Figures 2A and 2B

LDE/dkp

Customer No. 00128

PLEASE CONTINUE TO SEND OFFICIAL CORRESPONDENCE TO:

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